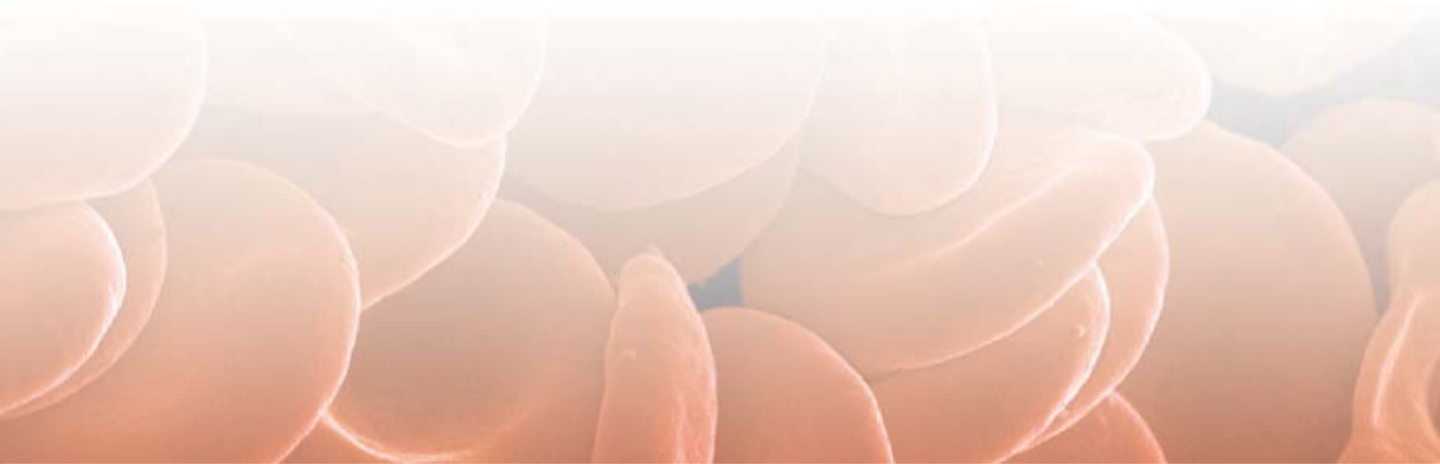


“Preliminary data suggest that anemia in inflammatory bowel disease (IBD) correlates with disease severity and that anemia treatment may improve IBD outcomes.”

VIII *Anemia* & Inflammatory Bowel Disease

Key Points

- Anemia affects many patients with inflammatory bowel disease (IBD).
- Multiple factors contribute to anemia in patients with IBD, including blood loss, inadequate nutrient intake/absorption, and the underlying inflammatory disease process.
- Early evidence suggests that there is a relationship between anemia, disease severity, and quality of life in patients with IBD.
- Erythropoietin therapy may be useful in treating the anemia associated with Crohn's disease and ulcerative colitis.



Inflammation and Anemia

The etiology of inflammatory bowel disease (IBD) is multifactorial. Chronic blood loss from the colon and intestines, along with poor nutrient and iron absorption, can lead to iron deficiency anemia.¹ A number of inflammatory cytokines, such as tumor necrosis fac-

regression analysis of serum erythropoietin levels measured prior to treatment in 52 IBD patients with anemia, 18 patients with anemia but no IBD, and 24 healthy volunteers, they found that patients with anemia and IBD had inadequate serum erythropoietin levels in relation to the degree of anemia they exhibited.⁴

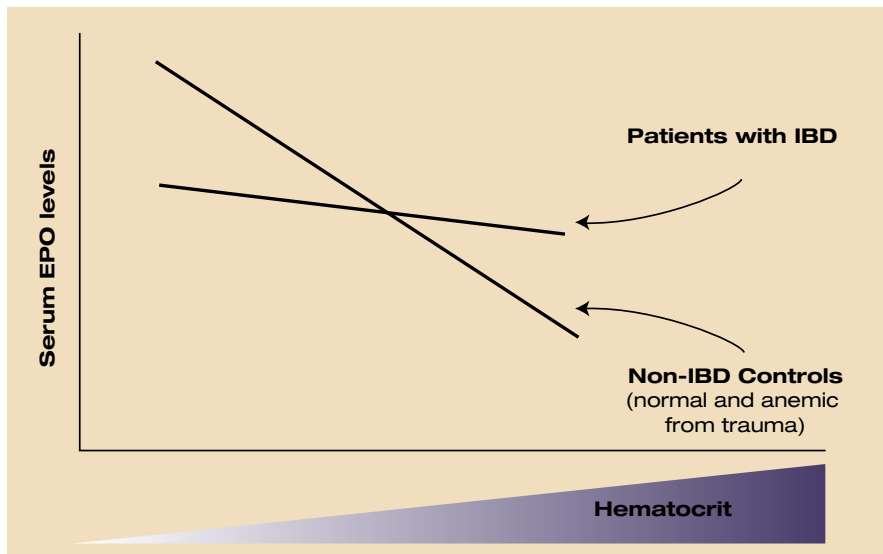


Figure 8-1: Patients with IBD and anemia exhibit a blunted erythropoietic response compared to non-IBD controls. Adapted and reprinted with permission from *N Engl J Med*.⁴

tor- α , interferon- γ , interleukin-1 α , and interleukin-1 β , contribute to disease progression.^{2,3} As with rheumatoid arthritis, it is likely that in addition to causing the characteristic signs and symptoms of IBD, these cytokines trigger anemia of chronic disease.

The enhanced production of these proinflammatory mediators may both inhibit the production of erythropoietin and the stimulatory effect of erythropoietin on the proliferation and maturation of erythroid precursors.⁴ When Schreiber and colleagues performed a linear

Anemia in IBD

Many of the more than 1 million people in the United States who have IBD⁵ also suffer from anemia. Although the exact number of IBD patients with anemia is not known, prevalence reports suggest that anemia may actually be very common among patients with ulcerative colitis and Crohn's disease. Researchers assessing anemia in patients with Crohn's disease have reported its presence in 10.2% to 72.7% of patients,^{3,4,6-12} whereas those who limited their study to patients with ulcera-

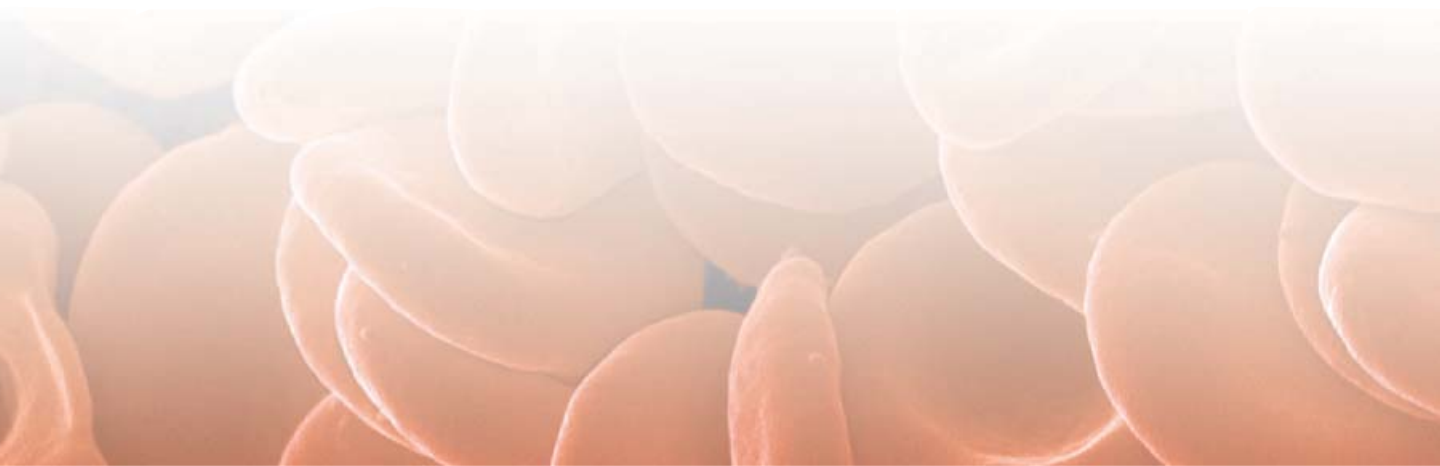
tive colitis have reported anemia in 8.8% to 73.7% of patients.^{4,7,13-16} In studies where the type of IBD was not specified, the prevalence ranged from 17.5% to 41.3%.^{17,18}

Beneficial Effects of Anemia Management

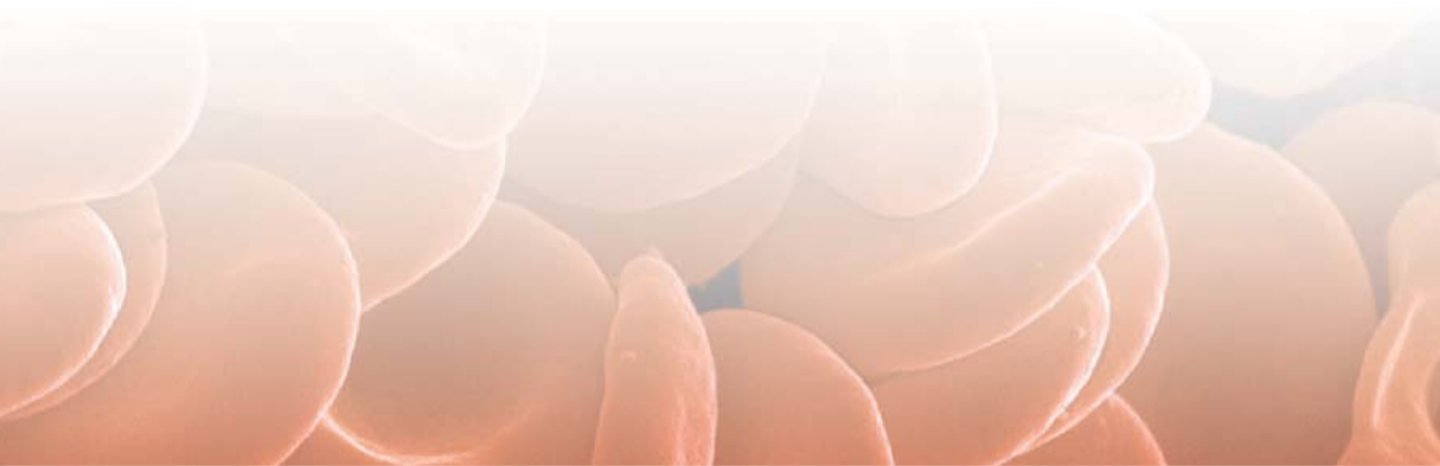
Preliminary data suggest that anemia in IBD correlates with disease severity⁴ and that anemia treatment may improve IBD outcomes.¹⁹ Schreiber and colleagues reported a significant relationship between anemia and clinical disease activity in a study of 334 patients with Crohn's disease, 25% of whom were anemic, and 332 patients with ulcerative colitis, 37% of whom were anemic ($P = 0.02$ and $P = 0.04$, respectively).⁴ Their findings showed that the presence of anemia was associated with significantly higher scores on disease activity indices and that lower Hb concentrations were associated with higher levels of interleukin-1 β ($P = 0.007$). Treatment of anemia with epoetin plus oral iron improved Hb concentrations to a greater extent than iron alone in these patients; however, the effect on disease outcomes was not reported.

Similarly, Gasché and colleagues showed that erythropoietin therapy effectively treats anemia in both patients with Crohn's disease¹⁹ and those with ulcerative colitis.²⁰ Furthermore, they examined the effects of anemia treatment with intravenous iron saccharate plus either epoetin or placebo in 40 patients with severe anemia (Hb ≤ 10.5 g/dL) and Crohn's disease.¹⁹ The group that received epoetin showed significant increases in Hb levels ($P = 0.004$). Anemia correction in these patients improved scores on the Crohn's Disease Activity Index, primarily due to changes in Hct and general well-being levels. The epoetin-treated patients also demonstrated significant positive changes ($P = 0.020$) in quality of life indicators, primarily attributed to improvements in physical ability, social activities, mood, and feeling of well-being.

Erythropoietin therapy may also benefit children with IBD. Dohil and colleagues showed that the administration of epoetin three times weekly to three children with Crohn's disease and anemia corrected Hb concentrations to within normal within 6 to 12 weeks.²¹ Anemia correction in these patients was associated with improved appetite, and less lethargy and irritability.



References



INFLAMMATORY BOWEL DISEASE

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